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DEFENSE SYSTEMS MANAGEMENT COLLEGE



PROGRAM MANAGEMENT COURSE INDIVIDUAL STUDY PROGRAM

OPERATING AND SUPPORT COSTS:

AN ARMY PERSPECTIVE

STUDY PROJECT REPORT
PMC 77-1

Jerry Lee Buckley
CPT US Army

FORT BELVOIR, VIRGINIA 22060

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OPERATING AND SUPPORT COSTS:

AN ARMY PERSPECTIVE

Individual Study Program

Study Project Report

Prepared as a Formal Report

Defense Systems Management College

Program Management Course

Class 77-1

by

Jerry Lee Buckley
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May 1977

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This study project report represents the views, conclusions and recommendations of the author and does not necessarily reflect the official opinion of the Defense Systems Management College or the Department of Defense

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DEFENSE SYSTEMS MANAGEMENT COLLEGE

STUDY TITLE: OPERATING AND SUPPORT COSTS: AN ARMY PERSPECTIVE

STUDY PROJECT GOALS:

- To document and analyze the increasing emphasis placed on O&S costs by the Army
- To propose and discuss management techniques which may reduce O&S costs
- To detail informational requirements for implementation of O&S cost-reduction management techniques

STUDY REPORT ABSTRACT:

The purpose of this report is to examine the emphasis on O&S costs on life cycle costing, particularly methods which are presently being employed to reduce these costs and alternative and supplemental methods which may be utilized. First, this paper documents the Army's development of operating procedures for O&S costing, beginning with preceduralization developed in late 1974 to the present. Then, appropriate and corrective management techniques are developed to aid the project manager in his control of O&S costs. Finally, these management techniques are assessed in light of informational requirements for implementation of these techniques.

This study concludes that there are substantial areas for improvement in DOD's, and particularly the Army's, management, control and reduction efforts pertaining to O&S costs. These areas include, but are not exclusively limited to, managerial, personnel and contractor emphasis on this aspect of total systems' costing, accountability for O&S costing at project level and in the field, and developing an accurate, adaptable and up-to-date data base for assessing O&S costing goals and accomplishments. This study concludes too that there are implementable methods to improve in these operational and informational areas.

This study makes two recommendations: One is that these proposed procedures be analyzed and discussed for appropriateness and applicability at the project manager level. Secondly, a current data base should be developed and made available to those involved in any aspect of O&S costing.

SUBJECT DESCRIPTORS: Life-cycle costing
O&S costing

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EXECUTIVE SUMMARY

OPERATING AND SUPPORT COSTS: AN ARMY PERSPECTIVE

The purpose of this paper is three-fold. First, the steadily increasing emphasis placed on Operating and Support (O&S) costs by DOD, and the Army in particular, is documented and analyzed. Secondly, and with an understanding of this recent shift in life cycle costing emphasis, four management techniques will be proposed and discussed. It is hypothesized that the utilization of these techniques might ultimately lead to an overall reduction in the life cycle cost of future major weapons systems, particularly O&S costs. Thirdly and finally, the information and data bank requirements for the effective implementation of these management techniques will be outlined and detailed.

It is apparent that the seventies have seen an increasing emphasis placed on the need to better understand and control weapons systems O&S costs throughout the defense establishment. While life cycle cost estimates, including estimates of the O&S phase of the life cycle, have been a requirement of the Army for a number of years, proceduralizing of the O&S costing requirement within the Army only began in 1974. This paper provides a documentation of the Army's development of operating procedures for O&S costing, beginning with the employment of test guidance in the UTTAS DA Joint Cost Team Independent Parametric Cost Estimate (IPCE) of November 1974 through the present.

Subsequent to the development of this background history, four management techniques which can be utilized to reduce O&S costs will be proposed.

These are:

- The manager should place early emphasis on and establish O&S cost goals (1) as management objective, and (2) as parameters to evaluate alternative design trade-offs.

- The manager's awareness of the management and control of O&S costs must be conveyed to the (prospective) contractor through (1) Requests for Proposals (RFP's) and (2) Source Selection Evaluation Boards.

- The Project Manager should place emphasis on logistics support planning for existing systems as well as newly initiated systems.

- The manager must develop mechanisms to provide for personnel accountability for existing systems as well as newly initiated systems.

In order to properly initiate and use these proposed management techniques, there are at least three informational requirements. These include:

- An accurate baseline on current systems to use as a reference point to measure the merit and accuracy of O&S costs projected for future weapons systems.

- Realistic cost estimates for future operations of both existing systems and systems under development.

- O&S cost goals for existing and new systems, broken out into goals for functional areas.

Major conclusions reached after this above analysis are that (1) there is room for significant improvement in the management of O&S costs and (2) a prerequisite to improving O&S costing efforts is the development of a management information system which provides the information required to

more fully understand the impact of O&S costs on total weapons systems costs.

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SECTION I

INTRODUCTION

During the 1960's, the defense environment began to experience spiralling increases in costs of new weapon systems. This climate, intensified by increased scrutiny of federal expenditures for defense, served to focus the attention of top policy makers within the defense establishment to the desirability of initiating new and improved management techniques, in order to better apportion the ever diminishing resources available for weapon system acquisition.

A proposal was to set up a cost analysis community in each service that concentrated on developing means of predicting the future cost of systems. The cost community introduced the life cycle cost concept which viewed new weapon systems costs sequentially as research and development (R&D), acquisition (investment) and operating and support (O&S). The primary emphasis over the years has been on the cost of producing and fielding the system or, in more accepted terms, on investment, recurring and non-recurring costs. One of the reasons that estimating emphasis has been in the investment cost arena is simply because there exists more historical data upon which to base estimates than for any other cost category.

The task of estimating life cycle costs is a formidable one. Ironically, the operating and support category was assumed the least troublesome. In actual fact, it has proven to be as difficult or more difficult to estimate than the acquisition sections of life cycle costing. Other observations with respect to operating and support costs emerged; "A 65-35 cost ratio between

acquisition and O&S had been reversed to 35-65 figure within the past two decades, and measured against the total defense budget, new weapon system acquisition spending declined from 30% to 20%, whereas O&S spending increased from 20% to 30%." (26:02)

Both the Office of the Secretary of Defense and Congress have become emphatic in their demands for full visibility of O&S cost estimates at major decision points in the weapon system Defense Acquisition Review Committee (DSARC) process. Such events drew attention to the need for improvement in our capability to predict all weapon system O&S costs, especially during the system's mature years as an active component of the weapon system arsenal.

The DEPSECDEF, in February 1976, expressed concern with the continuing growth of the fraction of the total DOD resources needed to operate and support weapons. The DEPSECDEF objective is "to achieve an overall reduction in the fraction of each Service's outyear budget allocated to O&S cost in the outyears by focusing now on reducing the O&S costs of the new systems we are developing". (16:B1)

The purpose of this paper is to emphasize the importance of the management and control of operating and support costs. The paper details management techniques that can be used to reduce O&S costs and the information required to allow better management and control of these costs

SECTION II

BACKGROUND

The program for visibility and management of support costs in life cycle costing was initiated in 1974 when the Deputy Secretary of Defense established an OSD Task Group including members from each Service to recommend an approach and to develop a phased implementation plan regarding visibility and management of operating support costs for major weapon systems programs. The Task Group prepared a FY 75 action plan directing each Service to "Develop a cost effective system to identify maintenance and operations costs by weapon system". (15:01)

While life cycle cost estimates had been a requirement in the Army for a number of years, proceduralizing of the O&S costing requirement within the Army began in 1974 with the employing of test guidance in the UTTAS DA Joint Cost Team Independent Parametric Cost Estimate of November 1974. This estimate was essentially based on readily available data. The effort was exploratory, designed primarily to test existing data structures and data sources. Guidance based on lessons learned was first institutionalized in the form of an Army O&S cost guide in December of that year.

As estimates in the different Army Project Offices and Service staffs attempted to implement the instructions to refine O&S costing, many problems surfaced. Much difficulty was encountered in developing a consensus on what constituted O&S costs for any given system. This definition problem was compounded by a dearth of historical data upon which to base perceptions of

the nature and composition of weapon system related O&S cost.

In recognition of the data problem, the DEPSECDEF established a management objective to improve the visibility and management of weapon system O&S costs. In response to this management objective, on 26 December 1974, the US Army Chief of Staff issued a Memorandum on Operating and Support Cost Management Information System (O&S CMIS) for weapon/support systems. During 1975, HQ DA formalized the Army plan for an O&S CMIS. The specific approach of this plan was the initiation of an O&S cost management information system to collect specified data for selected systems. The Army plan was submitted and approved in November 1975 and February 1976, respectively.

The plan outlined the development of a system to identify, collect and disseminate operating and support costs for existing major weapon systems. FY 75 costs for four specific Army aircraft were compiled in accordance with the O&S CMIS plan and submitted in March 1976. Development of the O&S CMIS continues.

The guidance for O&S costing continued to be tested during 1975 concurrently with examinations of what historical costs could be collected. Extended discussions at all levels began to yield a consensus within the Army as to the composition of O&S cost. The third iteration of the December 1974 Cost Guide became DA Pamphlet 11-4, "Operating and Support Cost Guide for Army Materiel Systems", in April 1976. As defined in the Pamphlet, life cycle operating and support cost is the "sum of all costs resulting from the operating maintenance and support (including personnel support) of the weapon system after it is accepted into the Army inventory. O&S cost build-up begins

when the first production equipment enters the active or reserve force structure either as operating unit equipment or combat crew training". (06:2-2)

In February 1976, the DEPSECDEF issued the memorandum at Appendix A. To support his objective of reducing O&S costs, the DEPSECDEF requested each Service to establish O&S cost goals for each system in development. The memorandum also stated that all future DSARC reviews would address the O&S cost impact of new systems compared to those being replaced or augmented and efforts which have been made or are required to achieve a new outyear reduction whenever possible.

Since the issuance of the DEPSECDEF memorandum, the Army has stepped up its data search and the O&S CMIS working group has recognized the need to develop a single information system capable of reporting costs on current systems. This information system is essentially a bottoms up method of cost estimating. This method attempts to actually go into the field and attribute costs to specific weapons systems. Another school of thought in getting a better handle on O&S costs of current weapons systems is the top down approach. This approach would attempt to capture what actually was spent on O&S of currently fielded systems by using the existing accounting system and allocating costs to specific systems.

The paper will not compare the two schools of thought on cost estimating methodologies, but will emphasize management techniques that can be used to reduce O&S costs and what information is required to aid better management and control of the O&S costs.

SECTION III
MANAGEMENT TECHNIQUES WHICH MAY BE EMPLOYED
TO REDUCE OPERATION AND SUPPORT COSTS

In the third section of this report on operation and support cost management, four specific management techniques which can be employed to reduce these significant costs will be detailed and discussed. They have been developed to overcome some of the past difficulties which have been encountered by each of the armed services in managing O&S costs for major systems and respond to the current emphasis being placed on this critical phase of life cycle costing efforts. A prerequisite to the application of these management techniques is an early awareness by major weapon system development managers of the ratio of O&S costs to total costs for the particular system under development. O&S costs from a particular system can vary from almost nothing, (e.g., the wooden round concept of the Cannon Launched Guided Projectile) to a significant section of the total cost (e.g., the XM1 tank). As early as possible, the design parameters which drive O&S costs should be identified and evaluated in the conceptualization of weapon systems. This early knowledge is an absolute requirement to affect reduction in O&S costs. With this awareness, the manager of a system currently in the conceptual phase of the life cycle of a system can take certain specific steps which will impact favorably upon O&S costs.

1. Early emphasis and establishment of O&S cost goals as management objectives and as parameters to evaluate alternative design trade-offs.

O&S cost goals should be established early and incorporated in the Project Manager's Plan. The cost goals established must be realistic,

measurable, achievable and ones that are within the Project Manager's control. These goals must be realistic in the sense that they must be based on the true environment in which the system will operate; that is, the fielded environment, and they must also be realistic in the sense that they are achievable. The goals must be measurable both in the Development/Test environment and in the environment in which the system is eventually fielded. They must be measurable in a Development/Test environment to allow maintaining/ control and trade-off analyses during development. They must be measurable in the eventual field environment in order to allow tracking and final evaluation of accomplishment. The goals must be within the sphere of the Project Manager's responsibility and control if he is to held accountable for them.

The goals should be established in terms of cost driving design parameters. This will allow the assignment of appropriate design parameter goals to responsible system/subsystem design organizations. These design parameter goals must be representative and sensitive to the real operating environment. Design parameters chosen should be the significant O&S cost drivers in the fielded environment.

The cost goals and cost driving design parameters should be continually evaluated in the design phase to minimize life cycle costs and still attain mission requirements. It must be recognized that minimizing life cycle costs could mean spending more in R&D or investment to reduce total life cycle costs. The overriding consideration should be minimum life cycle costs. These concepts must be recognized at all levels and the Project Manager given the authority to make these trade-offs. A good example of the trade-

offs possible is the trade-off made between R&D and procurement made by the Stinger Missile Project. Significant savings in production and O&S costs were achieved by a minimal increase in R&D costs. Managers should be continuously alert to this type of cost saving trade-off.

2. The emphasis on management and control of O&S costs must be conveyed to the contractor in Requests for Proposals (RFP's) and source selection boards.

After establishing goals both in terms of costs and in terms of cost driving design parameters, those portions that the contractor will be responsible for must be conveyed to the contractors. This can be done using the techniques described below.

Within an RFP and in the source selection agency, the contracting agency must specify those goals and parameters over which the contractor has control, will be responsible, and will be held accountable for. This is necessary for two reasons. One, the contractor, if unaware at inception of the constraints developed by O&S costs, might not respond completely in his technical approach, which otherwise might have been acceptable. In conjunction, this lack of awareness might well lead to incompletely costed proposals. Secondly, even with a partial awareness of O&S costs on the part of the experienced defense contractor, the contractor might misinterpret the scope of performance parameters and related O&S costs as they pertain to the particular system under examination, thereby leading to cost overruns. Neither situation is desirable nor is it acceptable to the manager who has fully conceptualized the O&S costs of his systems. The RFP must contain not only the cost goals and design

parameters, but also must contain all the information (cost factors, operating factors, etc.) to allow the contractor to fully evaluate the impact of design trade-offs and develop complete O&S costs.

The source selection criteria should be completely specified and clearly described in the RFP. It must be made clear to the contractor that the reduction of O&S costs is a major objective of the development of future weapon systems and life cycle costs will be given evaluation weight equal to mission requirements.

The RFP must contain a complete set of operating cost factors to be used by the contractor in evaluating the impact of his particular design on O&S costs. Factors should include tables of pay and allowance, POL costs and support costs as applicable. The cost factors provided do not necessarily have to be the actual costs, but should be reasonably close; the main point is that all contractors must be provided the same factors to assure consistency and fairness in the source selection evaluation process.

Contractual incentives should be used to meet operation and support cost goals. Various types of contract formats and structures can incorporate various contractual incentives in insuring that the prospective contract will be rewarded for "over-and-above" efforts to reduce the requisite O&S costs in fielding the system. The manager should stress, to the extent of his ability, the necessity for building in these O&S specific incentives and maximize the range of incentives offered. The incentives and the measurements for accomplishment should be detailed in the RFP.

Potential contractors must demonstrate their capability to assess O&S

costs. First, the contractor should be made aware through the RFP that his proposal must include a complete life cycle cost estimate (including O&S cost). The first step in evaluating the contractor's capability in dealing with the O&S cost problem is to have the SSEB do an intensive review of the contractor's O&S cost estimate for completeness and reasonableness. Secondly, the manager in conjunction with the Source Selection Evaluation Board (SSEB) should evaluate the contractor's previous performance under incentive-type contracts. This review should be performed in order to see if the contractor responds adequately to these incentives and has performed up to hoped for standards. Finally, close scrutiny should be given to the corporate capabilities of the potential contractor in order to ascertain if that contractor has had any previous experience in evaluating or dealing with the O&S costing problem. If previous experience is detected, the performance level should be further examined, either directly through an evaluation of the project's final report or by contacting the contracting agency's project officer.

3. Emphasis on logistics support planning for existing systems as well as new development systems.

Logistics support resources represent a significant portion of the total defense and Army budgets. "Control Supply and Maintenance (Program 7), for example, amounts to approximately \$2 billion of the Army's annual budget. The Operations and Maintenance, Army (OMA) account, which is projected at about \$7.4 billion per program year, encompasses both mission forces and logistics support resources. Even those programs normally considered to be combat mission-oriented (Program 1 through 6 and 10) contain substantial

resources that could be appropriately described as logistical support. Certain units within the division structure, such as the supply and transportation (S&T) battalion, maintenance battalion and division support command (DISCOM) are specifically logistic support units, yet they are displayed within the FYDP as part of Program 2" (10:1-1) In addition, virtually all other battalion-size units within a division have, as an integral part of their organizations, a specifically designated logistic activity whose function is supply, maintenance and transportation in support of the battalion's mission.

The existing programs of the FYDP are structured to contain both mission and mission support elements so that, in aggregation, it is impossible to display all resources assigned to each element. The FYDP programs are not structured to facilitate the extraction, segregation and display of total logistic support resources as such.

There is, therefore a clear need for identifying logistics support resources expended and projected by specific program unit, weapon system and logistic function/subfunction.

The General Research Corporation (GRC) has been tasked by the Army to study the feasibility of shredding out logistic support specific costs on existing systems. The objective is "to develop an improved Army logistics resources data base structure, which will provide a flexible and realistic means of determining and displaying logistics support resources allocated to, commanded by and projected for specific combat force units and for

weapon systems". (10:5-1) This GRC study should be used as a basis to structure the logistic elements of weapon systems costs for use by logisticians. Coordination with the GRC effort by Army O&S staff should be maintained to make maximum use of their efforts in determining data requirements, data sources and data structure.

Given this type of information will enable the Army to shred out the cost goals which the logistics people are responsible for in terms which they can control and manage. The logisticians can then put the parameters they are responsible for in the language they understand, can change, impact on and formulate logistic planning for existing systems as well as planning for new development systems.

4. Emphasis on the necessity for personnel accountability for existing systems as well as new development systems.

A major cost driver in operating and support costs is Military Personnel pay and allowances. It is necessary not only to review Tables of Organization and Equipment (TOE) of current systems but conduct early TOE and occupational specialty analysis for new development systems in order to reduce the Military Pay and Allowance (MPA) portion of O&S costs.

An in-depth analysis needs to be accomplished that compares battalion or weapon unit manning with that designed for and projected for that system. In other words, is the Army taking maximum advantage of cost saving parameters designed for existing systems? This information can be used by the Army to determine whether a system already fielded that had O&S cost savings actually realized those savings when fielded. If not, can the TOE be adjusted to reduce MPA costs without significantly redoing the weapon system mission accomplishment capability?

In addition to analyzing existing system MPA costs, it is necessary to impact early in new system development (conceptual phase) to assure maximum advantage is taken of O&S cost saving designs. This policy was initiated by the Army Patriot Missile System and the system was designed to reduce overall O&S costs and specifically MPA costs. The Patriot projected TOE should result in a cost reduction over the Improved Hawk Missile System it is replacing.

In addition to analyzing weapon TOE's, it is necessary to analyze skills required for currently fielded weapons as well as early analysis of skills required to operate new development system to assure timely establishment and implementation of new TOE's with optimum skill mixes. The author has served in Army missile units where operators were assigned to units with technical skills required on the replaced system but not on the system they were assigned to. Operators were not only malassigned, but the Ft. Bliss Training School was still training the operators for their specific assignment. The loop had not been closed with the training school, informing them that a particular experience specialty had been designed out of the new system.

Management emphasis must not only be placed on early TOE and skill analysis, but on personnel accountability as well, once the system is fielded to insure the reduction in O&S costs planned for are realized.

SECTION IV

INFORMATION REQUIRED TO ALLOW BETTER MANAGEMENT AND CONTROL OF O&S COSTS

The following four specific types of information are required to allow better management and control of O&S costs, through the application of the management techniques discussed in Section III.

1. An accurate baseline on current systems to use as a reference point, or yardstick to measure the merit of O&S costs projected for future weapons systems.

What does it really cost to operate today's system in the operating environment? There are four techniques available to compute this cost. The first method would be to account for all costs on a weapon system. This would mean expanding our current accounting system to break-out costs down to a specific weapon system level. Secondly, and the method most widely used, is termed synthesizing. This method is a bottom-up approach of costing using parametrics, analogies or engineering estimates for cost estimating. These techniques are either statistical or rely heavily on sampling theory. The third method is the allocation method or top down approach to cost estimating. This involves taking costs at actual aggregate levels and allocating costs based on relative measures of system usage. In other words, the costs are available on how much aircraft fuel the Army buys; using allocation factors, this total would be allocated by aircraft type and eventually to weapon system level. The fourth technique would be a mix of the three. This would entail obtaining costs from the existing budgeting/accounting system to the lowest level possible and then allocating or synthesizing to

the remaining levels.

Whichever method is used, a baseline must be established for each currently fielded weapon system in terms of dollars required per mission goal specified. The baseline should come as close to capturing the costs actually expended in mission accomplishment as possible.

2. Realistic cost estimates for future operations of both existing systems and systems under development.

Once the baseline is established for a currently existing weapon system in now-year dollars, it can be used for projecting future costs and cost reductions, and for actually measuring O&S cost reductions when you get there.

This may be accomplished by extrapolating the historical baseline costs into future costs for existing systems after making adjustments for projected changes in the operating environment. For example, once we know what an M60 tank costs to operate today, we can project what it will cost in the future after making changes in the operating scenario, age of the tank, etc. Once the baseline reference is established, it can be used in the future to compare actual costs expended.

In addition to having this baseline to translate existing systems costs into projected costs, it can be used to compute new system baseline and projected costs for the new system environment. Obtaining this projected new system costs requires three steps.

● Cost translation of current system baseline costs to operate costs for the new development system. For example, once we have an M60 tank baseline, these statistics can be used to develop a baseline estimate for

the XM-1.

- Normalize the costs for the projected environment of the new system. For example, it may require fewer XM-1 tanks to do the same job an M60 tank does.

- Establish O&S cost goals in terms of reducing the projected baseline. Since the baseline was established based on the current system, it should be reduced to obtain the benefit of cost saving design parameters.

3. O&S cost goals for existing and new systems need to be broken out into goals for functional areas.

Once those goals have been established for existing and new systems, they need to be broken out into goals for functional areas (operating, personnel, maintenance, supply, RAM, etc.) and translated into measurable, maintainable and controllable goals by each function.

This would be more difficult for new development systems than existing ones. For new systems, in order to impact early in design, the contractor must be able to translate these future costs from the operating environment into a design parameter that is measurable in a design development test environment. He must then be able to translate these parameters back to operating environment whenever he performs a trade-off analysis to accurately measure the trade-off on the design parameters.

It is important to obtain the actual costs once the equipment is fielded. This is important for two reasons. First, to measure the actual accomplishment of the system in reducing O&S costs. Secondly, the information is required to improve the cost estimating/goal development for future programs.

Thus, a cost tracking system similar to the one developed for Design to Cost should be designed and implemented for O&S costs.

SECTION V

CONCLUSIONS

1. This study concludes that there are substantial areas for improvement in the DOD's, and particularly the Army's, management control of and reduction of O&S costs. While not fully covering all potential subject areas, such aspects of O&S cost control should include:

- PM shop and contractor emphasis on O&S costing
- Accountability for O&S costing at project level and in the field
- Development of an accurate and current data base for O&S cost accounting.

2. Secondly, it is concluded that there are current procedures extant and operable to implement methods in these operational and informational areas.

3. Finally, it is concluded that many other aspects of O&S cost management must be considered. That is, in order to develop an operating data base, collection procedures must be developed and human factor engineering should be considered..

SECTION VI

RECOMMENDATIONS

This study made two recommendations. One is that the prepared management procedures be analyzed and discussed for appropriateness and applicability at the Project Manager level. Secondly, a current data base should be developed and made available to those involved in any aspect of O&S costing.



THE DEPUTY SECRETARY OF DEFENSE
WASHINGTON, D. C. 20301

28 FEB 1976

MEMORANDUM FOR The Secretaries of the Military Departments

SUBJECT: Reduction of Outyear Operating and Support (O&S) Costs

I am seriously concerned with the continuing growth of the fraction of the total DoD resources needed to operate and support our weapons and the decline in funds for new weapon procurement. A means to increase real DoD purchasing power is to increase emphasis on controlling the outyear operating and support costs of weapon systems during the development and acquisition phase both through attention to design, procurement, and support planning. We must have the dual objectives of reducing the fraction of the outyear DoD budget allocated to weapon O&S costs while at the same time maintaining operational readiness.

My 16 October 1975 memorandum to you, Subject: Visibility and Management of Support Costs (MBO 9-2), described one important aspect of this action plan - improving the visibility and management of support costs. While I am confident that we can achieve the ability to identify and track those costs. I am equally concerned that insufficient attention is being paid to controlling eventual system O&S costs during conceptual, validation and full-scale development phases of new systems. My objective is to achieve an overall reduction in the fraction of each Service's outyear budget allocated to O&S cost in the outyears by focusing now on reducing the O&S costs of the new systems we are developing.

Specifically, I am requesting that each Service establish O&S cost targets for each system in development to support the above objective and follow up on the achievement of such targets. For the near term, the approach should be to identify in the DCP/DSARC process, the incremental O&S cost impact of each weapon decision (in terms of the O&S cost impact of planned replacement or augmentation of a function), and to periodically assess the extent to which the decisions taken collectively support the broad objective. Any net growth would then require tradeoffs to support the objective of overall reduction of the O&S cost fraction in the outyears. Such could include a search for more effective support concepts as well as conceptual and design tradeoffs to meet the need. Decisions on new weapons will be heavily influenced by the extent to which each program contributes to the objective.

CA
Reconcile
the costs
For 8004
&
R&D
can reduce
the costs

The attachment provides guidance in the areas where attention should be focused for greatest payoff. I expect this guidance to be applied at all levels of the Services and that progress toward meeting the objective will be reviewed at the highest levels. I will need your full support to make this policy succeed. From this time, each DSARC review is to specifically address the O&S cost impact of new systems compared to those to be replaced or augmented; and efforts which have been made or are required to achieve a net outyear reduction whenever feasible. Within three months I would like to have your planned approach to establishment of O&S cost goals for all major programs now in the DSARC process (with emphasis on those prior to DSARC II) and the methodology for an annual assessment of the net O&S cost impact of decisions in the prior year. The first such assessment could be submitted for my review a year from this date.

what was planned approach !

what will be assessment 28 FEB 77 !

Signed
W. P. Clements Jr.

Guidelines for the Reduction of Outyear Operating and Support Costs

Scope: Reduction of outyear operating and support costs requires the implementation of a broad plan of action as compared to attempting to minimize life cycle costs on individual programs.

Planning: To meet the dual objective of reducing the fraction of the DoD budget allocated to weapon O&S costs while simultaneously improving readiness will require new major initiatives in weapons design and logistic planning processes during the acquisition phase. First, for new or modified systems designed to replace or improve on a present capability, target system O&S costs and related reliability, maintainability and personnel parameters should be established during the conceptual phase/requirements process, and in subsequent Service and DSARC reviews, so as to achieve net savings for the outyear O&S budget, when compared to the current structure of operational elements these new systems are designed to replace. Acquisition of these new systems will be guided by the principles of Design to Cost (DTC), where performance requirements will be traded with schedule and cost. Additional emphasis should be placed on the significance of O&S costs in this trade-off process. Performance requirements that drive O&S costs should be identified and traded during the DTC process. Alternative logistic concepts should be examined, including non-standard approaches which offer significant cost advantage.

In cases where new mission capabilities are added rather than being a modernization of an existing system, every effort should be made to incorporate system characteristics which reflect an acute awareness of the necessity to meet established overall Service target O&S costs. Particularly to be discouraged is the reduction of quantities, and this should be identified whenever it is selected as the approach toward lowered O&S costs. It may be possible to identify system concepts that can be merged or modified and developments guided accordingly to control and reduce O&S costs.

Procedure: Each Service should establish a procedure for assessing the net incremental O&S cost impact, both for new programs and those presently in the acquisition phase, in order to provide an equitable allocation of available fiscal resources to each mission area. For each program, opportunities to reduce O&S costs and, in particular, manpower, should be identified and vigorously pursued during development. To be effective, however, this procedure must be coupled with a firm plan and commitment to reduce or eliminate specific manpower billets and facilities at a specified time. Special review procedures should be established to assess logistical concepts and implementation plans with a view toward causing inter-program consolidation, re-orientation, and application of intensive standardization to achieve meaningful O&S cost reductions.

Use of EPA: The O&S cost impact of each weapon decision can be used as an input to the O&S cost projections in the EPA. As O&S cost projections are improved, the EPA can serve as framework for assessing tradeoffs to meet the broad objectives for controlling outyear O&S Costs.

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